



Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
for
Bondsville Fire & Water District

What is SWAP?

The Source Water Assessment Protection (SWAP) program, established under the federal Safe Drinking Water Act, requires every state to:

- inventory land uses within the recharge areas of all public water supply sources;
- assess the susceptibility of drinking water sources to contamination from these land uses; and
- publicize the results to provide support for improved protection.

Susceptibility and Water Quality

Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area.

A source's susceptibility to contamination does *not* imply poor water quality.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, disinfecting, filtering, or treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Actual water quality is best reflected by the results of regular water tests. To learn more about your water quality, refer to your water supplier's annual Consumer Confidence Reports.

Table 1: Public Water System Information

<i>PWS Name</i>	Bondsville Fire & Water District
<i>PWS Address</i>	P.O. Box 179
<i>City/Town</i>	Palmer
<i>PWS ID Number</i>	1227002
<i>Local Contact</i>	Mr. Robert Flagg
<i>Phone Number</i>	(413) 283-9922

Introduction

We are all concerned about the quality of the water we drink. Drinking water supplies may be threatened by many potential contaminant sources, including storm runoff, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures.

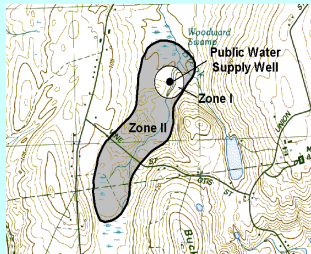
Refer to Table 3 for Recommendations to address potential sources of contamination. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes the following sections:

1. Description of the Water System
2. Land Uses within Protection Areas
3. Source Water Protection Conclusions and Recommendations
4. Appendices

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and a Zone II protection area.



Glossary

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material (i.e. clay) that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. This area should be owned or controlled by the water supplier and limited to water supply activities.

Zone II: The primary recharge area for the aquifer. This area is defined by hydrogeologic studies that must be approved by DEP. Refer to the attached map to determine the land within your Zone II.

Section 1: Description of the Water System

System Susceptibility

High

Zone II #: 103

Susceptibility: High

Well Names	Source IDs
Well #1	1227002-01G
Well #2	1227002-02G
Well #4	1227002-04G
Well #5 (Proposed)	

Bondsville is a village within the town of Palmer Massachusetts, a medium sized community in south central, Massachusetts. Palmer, established in the early 1700's, initially developed as an industrial community along the numerous brooks and rivers that flow through the area. Palmer consists of the villages of Bondsville, Three Rivers, Whipples, Thorndike and Palmer. The Swift River flows into the Ware River and the Ware and Quabaug Rivers join to form the Chicopee River. The Swift River forms the northwestern boundary of Palmer between Palmer and Belchertown. Bondsville is located along that portion of the Swift River.

There are four community public water supply systems in Palmer: Thorndike, Palmer, Bondsville and Three Rivers Fire Districts. The Bondsville District currently supplies water to the Thorndike system with the Three Rivers District supplying a portion of Thorndike's water. Thorndike purchases water from Bondsville and Three Rivers because of previous water quality problems with the Thorndike Fire District's source. Bondsville Fire & Water District maintains three active water supply Wells #1 (1G), #2 (02G) and #4 (04G); Well #4 was installed adjacent to Well #3, to replace the Well #3 due to decreased capacity. Well #3 has been maintained as an emergency source. Bondsville Fire & Water District is presently completing the final stages of the New Source Approval Process for Well #5. Once proposed well #5 is put into service, Well #3 will be abandoned as a public water supply.

All of the wells are located within the same unconfined sand and gravel aquifer, immediately adjacent to the Jabish Brook in the town of Belchertown. Well #1 is approximately 200 feet east of Well #2 and Well #4 is approximately 200 feet northeast of Well #1. Wells #1 and #2 are on the west side of Jabish Brook and Well #4 is on the east side. All of the wells are located approximately 80 feet from the brook channel. Well #1 is a gravel packed well, while Wells #2 and #4 are gravel developed wells. All of the wells are between 54 and 57 feet deep. Since the wells are all located within close proximity to each other and within the same hydrogeologic regime, they share the same Zone II contribution area. The wells and the entire Zone II are located within the Town of Belchertown.

The wells are located in sand and gravel deposited during the recession (melting) of the glaciers some 12-18,000 years before the present. Streams and rivers have reworked the deposits and recent streams have deposited additional alluvial material. Boring logs and maps in the vicinity of the wells indicate

medium to coarse sand deposits approximately 45 to 85 feet in depth. There is no evidence of a confining clay layer. Groundwater modeling conducted to delineate the Zone II, indicates that under extended duration pumping conditions, Jabish Brook contributes water to the aquifer. Geologic mapping of the area shows the bedrock in the area mapped as the Belchertown Complex, an igneous, quartz monzodiorite.

Each well has a Zone I radius of 400 feet and the Zone II was delineated as part of the New Source Approval process utilizing geological mapping and analytical modeling. The Zone II for Well #5 was delineated through a numerical model and for the most part mimics but slightly modifies the existing Zone II. Data for the analysis was gathered from extended duration pumping tests. The wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers (i.e. clay) that can prevent contaminant migration. Please refer to the attached map to view the boundaries of the Zone II and consult the Consumer Confidence report for current water quality data. Belchertown's overlay Aquifer District includes all stratified drift (sand and gravel aquifer) areas within town and there are protective bylaws associated with that overlay district. In addition, the Board of Health has adopted groundwater supply protection regulations for the Aquifer District. The Board of Health intends to modify language in the regulations and adopt a floor drain regulation to be in compliance with 310 CMR 22.000.

Water is chlorinated for disinfection prior to distribution. For current information on water quality monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report.

Section 2: Land Uses in the Protection Areas

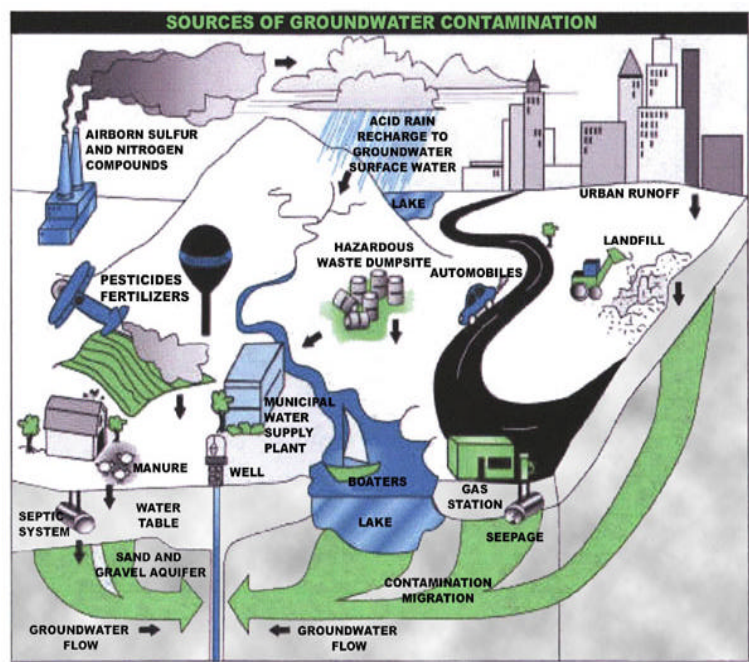
The land use within the Zone II for the Water District wells is a mixture of forest, cropland, grazing and residential (refer to attached map for details). Land uses and activities that are potential sources of contamination are listed in Table 2, with further detail provided in the Table of Regulated Facilities and Table of Underground Storage Tanks in Appendix B.

Key Land Uses and Protection Issues include:

1. Zone I
2. Residential land uses
3. Transportation corridor, railroad and right-of-way
4. Agricultural activities
5. Comprehensive protection planning

The overall ranking of susceptibility to contamination for the system is high, based on the presence of at least one high threat land use within the water supply protection areas, as seen in Table 2.

1. Zone Is – The Zone I for all of the wells is a 400 foot radius around the well casing. Currently, Massachusetts drinking water regulation (310 CMR 22.00 Drinking Water) requires public water suppliers to own the Zone I, or control the Zone I through a conservation restriction, Memorandum of Understanding or other legal mechanism as approved by the DEP. The public water supplier does not own the entire Zone I for wells #1 through #4. The District does own the Zone I for Well #5. Only activities directly related to the water supply, or other no-threatening activities, as determined by the DEP, are allowed in the Zone I.



The wells are located within the floodplain of Jabish Brook. The Water District has recently acquired additional land within the Zone II to protect the water supply area. The Vermont Central Railroad and a portion of Bardwell Road are within the Zone I area. The District has received a verbal agreement from the railroad company that they will not use chemical pesticides within the Zone I. The motor control building is located within the Zone I and has a tight tank installed for the facility's floor drain.

Zone I Recommendations:

- ✓ Prohibit any new non-water supply activities from the Zone I.
- ✓ Where it is feasible, consider for future expansion, options for purchasing land and/or negotiate a conservation restriction for land adjacent to the existing Zone I.
- ✓ Agreement Options - Until land is available for acquisition or restriction, attempt to obtain a Memorandum of Understanding and Right of First Refusal.
 - A Memorandum of Understanding (MOU) is an agreement between the landowner and public water supplier in which the landowner agrees not to engage in specific threatening activities. The MOU should be specific to the land use or activity. For example, if the land is residential with a septic system, the owner could agree to not place chemicals, petroleum products, or other hazardous or toxic substances, including septic system cleaners, into the septic system, and agree that the system will be pumped at a specific frequency. As another example, the portions of fields within the Zone I would not have manure, fertilizers or pesticides spread on them. Understanding how an activity threatens drinking water quality is an important component of developing an effective MOU.
 - A Right of First Refusal is a legal document that gives the water supplier the first chance to purchase land when it becomes available. Please refer to the example of the Right of First Refusal documents attached in the Appendices.

The Department commends the Bondsville Fire & Water District for its proactive efforts to acquire property and control activities within the Zone I and recommends continued efforts in establishing a program for planning to acquire ownership or control of additional property within the areas critical to protecting water quality. If there is no other reasonable method to secure rights and protect these sources, the Water District may wish to consider taking necessary water supply land by eminent domain to protect the sources. This recommendation is not only for the existing sources but also should be considered for future development of sources, if they are needed. We recommend consulting your Solicitor regarding land takings in another community.

2. Residential Land Uses – Portions of the Zone II consist of residential areas. The Zone II areas are not connected to municipal sewer and therefore utilize on-site septic systems. If managed improperly, activities associated with residential areas can contribute to drinking

What are "BMPs?"

Best Management Practices (BMPs) are measures that are used to protect and improve surface water and groundwater quality. BMPs can be structural, such as oil & grease trap catch basins, nonstructural, such as hazardous waste collection days or managerial, such as employee training on proper disposal procedures.

For More Information

Contact Catherine Skiba in DEP's Springfield Office at (413) 755-2119 for more information and assistance on improving current protection measures.

Copies of this report have been provided to the public water supplier, board of health, and the town.

Source Protection Decreases Risk

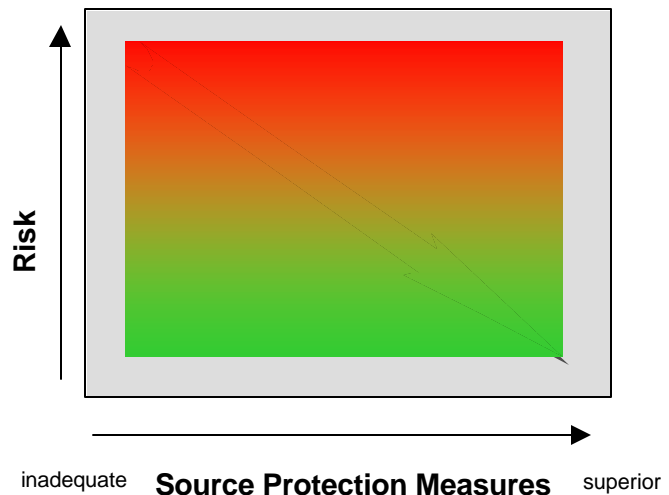


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

Potential Source of Contamination vs. Actual Contamination

The activities listed in Table 2 are those that typically use, produce, or store contaminants of concern, which, if managed improperly, are potential sources of contamination (PSC).

It is important to understand that a release may never occur from the potential source of contamination provided facilities are using best management practices (BMPs). If BMPs are in place, the actual risk may be lower than the threat ranking identified in Table 2. Many potential sources of contamination are regulated at the federal, state and/or local levels, to further reduce the risk.

Table 2: Land Use in the Protection Areas

For more information, refer to Appendix B: Regulated Facilities within the Water Supply Protection Areas

Activities	Quantity	Threat*	Potential Source of Contamination
Agriculture			
Fertilizer / Pesticide Storage or Use—Crops	1	H	Fertilizers: leaks, spills, improper handling, or over-application
Farm animal—non-commercial (horses)	1	M	Manure (microbial contaminants): improper handling
Manure Storage	1	H	Microbial and nutrient contamination to surface and groundwater
Hazardous materials—farm equipment	Few	M	Fuel storage, petroleum products for equipment
Residential			
Fuel Oil Storage (at residences—ASTs/USTs)	Numerous	M	Fuel oil: spills, leaks, or improper handling
Lawn Care / Gardening	Numerous	M	Pesticides: over-application or improper storage and disposal
Septic Systems / Cesspools	Numerous	M	Hazardous chemicals: microbial contaminants, and improper disposal
Miscellaneous			
Transportation corridors	1	M	Fuels and other hazardous materials: accidental leaks or spills; pesticides: over-application or improper handling
Pole mounted electrical transformers	Several	L	MODF and possibly PCBs: spills, leaks, or improper handling. Most transformers have been converted to non-PCB. Contact the electric company to ensure no PCBs are within the transformers especially in Zone I.
Right-of-way (water)	1	L	Corridor maintenance, over-application or improper handling of pesticides.
Railroad tracks	1	H	Over-application or improper handling of herbicides, leaks or spills of transported chemicals and maintenance chemicals. Verbal agreement to use mechanical methods.
Cemetery	1	M	Leaks, spills, improper handling, or over-application of pesticides; historic embalming fluids (such as arsenic)

Table 2 Notes:

1. When specific potential contaminants are not known, typical potential contaminants or activities for that type of land use are listed. Facilities within the watershed may not contain all of these potential contaminant sources, may contain other potential contaminant sources, or may use Best Management Practices to prevent contaminants from reaching drinking water supplies.
2. For more information on regulated facilities, refer to Appendix B: Regulated Facilities within the Water Supply Protection Area information about these potential sources of contamination.
3. For information about Oil or Hazardous Materials Sites in your protection areas, refer to Appendix C: Tier Classified Oil and/or Hazardous Material Sites.

* **THREAT RANKING** - The rankings (high, moderate or low) represent the relative threat of each land use compared to other PSCs. The ranking of a particular PSC is based on a number of factors, including: the type and quantity of chemicals typically used or generated by the PSC; the characteristics of the contaminants (such as toxicity, environmental fate and transport); and the behavior and mobility of the pollutants in soils and groundwater.

water contamination. Common potential sources of contamination include:

- **Septic Systems** – Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the groundwater because septic systems lead to the ground. If septic systems fail or are not properly maintained they can be a potential source of microbial contamination.
- **Household Hazardous Materials** - Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. Improper use, storage, and disposal of chemical products used in homes are potential sources of contamination.
- **Heating Oil Storage** - If managed improperly, Underground and Aboveground Storage Tanks (UST and AST) can be potential sources of contamination due to leaks or spills of the fuel oil they store.
- **Stormwater** – Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include lawn chemicals, pet waste, and contaminants from automotive leaks, maintenance, washing, or accidents.

Residential Land Use Recommendations:

- ✓ Educate residents on best management practices (BMPs) for protecting water supplies. Distribute the fact sheet “Residents Protect Drinking Water” available in Appendix A and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMPs for common residential issues.
- ✓ Work with planners to control new residential developments in the water supply protection areas.
- ✓ Promote BMPs for stormwater management and pollution controls.
- ✓ Consider working with the Fire Chief to inventory fuel sources and storage methods in the Zone II. Provide BMPs to homeowners for fuel oil storage.



3. Transportation corridors, railroad and right-of-way - A portion of Bardwell Road runs through the Zone I and several other local roads run throughout the Zone II area. Roadway construction, stormwater runoff, maintenance, and typical highway use can all be potential sources of contamination. Accidents can lead to spills of gasoline and other potentially dangerous transported chemicals. Roadways are also frequent sites for illegal dumping of hazardous or other potentially harmful wastes. De-icing materials, automotive chemicals and other debris on roads are picked up by stormwater and wash into catchbasins or directly into streams and brooks.

Railroad tracks run through the Zone II. Rail corridors serving passenger or freight trains are potential sources of contamination due to chemicals released during normal use, track maintenance, and accidents. Accidents can release spills of train engine fluids and commercially transported chemicals.

Recommendations:

- ✓ Identify stormwater drains and the drainage along transportation corridors. Wherever possible, ensure that drains discharge stormwater outside of the Zone II. Where it is practical recommend water quality swales to slow stormwater flow and settle out sediments before they discharge to surface water.

- ✓ Contact the Town to ensure stormwater systems are inspected, maintained, and cleaned on a regular schedule. Street sweeping reduces the amount of potential contaminants in runoff.
- ✓ Continue current efforts of working and planning with local emergency response teams to ensure that any spills within the Zone II can be effectively contained and the Water District is notified.

4. Agricultural Activities – There are a few farms (commercial/non-commercial—crop, hay and pasture) throughout the Zone II. Pesticides and fertilizers have the potential to contaminate a drinking water source if improperly stored, applied, or disposed. If not contained or applied properly, animal waste from barnyards, manure piles and field application are potential sources of contamination to ground and surface water supplies. In addition, farms and large commercial facilities often conduct their own maintenance on their equipment and have storage of hazardous materials and waste.

Agricultural Activities Recommendation:

- ✓ If appropriate, work with the DEP to negotiate Conservation Restrictions for these land areas.
- ✓ Work with commercial farmers in your protection areas to make them aware of your water supply and to encourage the use of a USDA Natural Resources Conservation Service (NRCS) farm plan to protect water supplies. Review the fact sheet available online at <http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/EQIPFct.pdf> and call the local office of the NRCS in Hadley at 413-585-1000 for assistance.

What is a Zone III?

A Zone III (the secondary recharge area) is the land beyond the Zone II from which surface and ground water drain to the Zone II and is often coincident with a watershed boundary.

The Zone III is defined as a secondary recharge area for one or both of the following reasons:

1. The low permeability of underground water bearing materials in this area significantly reduces the rate of groundwater and potential contaminant flow into the Zone II.
2. The groundwater in this area discharges to a surface water feature such as a river, rather than discharging directly into the aquifer.

The land uses within the Zone III are assessed only for sources that are shown to be groundwater under the direct influence of surface water.

- ✓ Encourage farmers and property managers to incorporate an Integrated Pest Management (IPM) approach into their pest management program. IPM is an ecologically-based approach to pest control that links together several related components, including monitoring and scouting, biological controls, mechanical and/or other cultural practices, and pesticide applications. By combining a number of these different methods and practices, satisfactory pest control can be achieved with less impact on the environment.
- ✓ Promote the use of BMPs for on-site storage of fuel oil, handling, storage, and disposal of hazardous materials, and emergency response planning. Request that farmers evaluate their status as hazardous waste generators and register, as appropriate.
- ✓ Encourage farmers to manage pesticides, fertilizers and manure and store them within a structure designed to prevent runoff.
- ✓ The USDA has various funding sources for government agencies, non-government organizations and agricultural facilities through programs such as those listed on the USDA web site <http://search.sc.egov.usda.gov/>. One program in particular, the Environmental Quality Incentives Program (EQIP) may be utilized in a variety of projects from DPW stormwater management to farm nutrient management designed to protect surface and groundwater. Review the fact sheet available online at <http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/EQIPFct.pdf>, and call the local office of the NRCS for assistance.
- ✓ Work with hobby farmers by supplying them with information regarding protecting their own wells and the public water supply by encouraging the

Top 5 Reasons to Develop a Local Wellhead Protection Plan

- ❶ Reduces Risk to Human Health
- ❷ Cost Effective! Reduces or Eliminates Costs Associated With:
 - ♦ Increased groundwater monitoring and treatment
 - ♦ Water supply clean up and remediation
 - ♦ Replacing a water supply
 - ♦ Purchasing water
- ❸ Supports municipal bylaws, making them less likely to be challenged
- ❹ Ensures clean drinking water supplies for future generations
- ❺ Enhances real estate values – clean drinking water is a local amenity. A community known for its great drinking water in a place people want to live and businesses want to locate.

Additional Documents:

To help with source protection efforts, more information is available by request or online at mass.gov/dep/brp/dws including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

use of BMPs. Refer to <http://www.state.ma.us/dep/brp/dws/dwspubs.htm> and <http://www.state.ma.us/dep/consumer/animal.htm#dwqual> for additional resources.

5. Comprehensive Protection Planning – Currently, the Town of Belchertown does have water supply protection controls that meet the requirements of the Department's Wellhead Protection regulation 310 CMR 22.21(2). The Board of Health has adopted protection regulations that encompass the Aquifer Protection District in town that includes the Zone II areas. The Board of Health reportedly will be considering a floor drain regulation and some language modifications to existing regulations to comply with 310 CMR 22.000. The District does not have a protection plan although they have many of the components in place, such as a plan for land acquisition which it has executed to protect land critical to the recharge areas. Protection planning protects drinking water by managing the land area that supplies water to a well. A Wellhead Protection Plan can coordinate community efforts, identify protection strategies, establish a timeframe for implementation, and provide a forum for public participation. There are resources available to help communities develop a plan for protecting drinking water supply wells.

It should be noted that activities within the Zone III may also pose a potential threat to the water supply. Specifically, the Jabish Brook contributes water to the aquifer and wells and when the brook contributes water to the aquifer, an accidental release to the brook may pose a threat to water quality. This report

does not include facilities located upgradient of the wells along the Jabish Brook.

Protection Planning Recommendations:

- ✓ Consider preparing a Wellhead Protection Plan. Establish a protection team that includes participants from the Town of Belchertown and the Belchertown Water District, and refer them to <http://mass.gov/dep/brp/dws/protect.htm> for a copy of DEP's guidance, "Developing a Local Wellhead Protection Plan".
- ✓ Work with and encourage the Board of Health to investigate land uses that may pose a potential threat to the water quality within the aquifer and along Jabish Brook.
- ✓? Work with emergency responders to be sure the District is notified of a release to Jabish Brook within the Zone II or Zone III.

Identifying potential sources of contamination is an important initial step in protecting your drinking water sources. Further local investigation will provide more in-depth information and may identify new land uses and activities that are potential sources of contamination. Once potential sources of contamination are identified, specific recommendations like those below should be used to better protect your water supply. Other land uses and activities within the Zone II are listed in Table 2.

Section 3: Source Water Protection Conclusions and Recommendations

Current Land Uses and Source Protection:

As with many water supply protection areas, the system's Zone II contains potential sources of contamination. However, source protection measures reduce the risk of actual contamination, as illustrated in Figure 2. The water supplier is commended for taking an active role in promoting source protection measures in the Water Supply Protection Areas through:

- Proactively pursuing land acquisition and protection options in the Zone I,
- Maintaining detailed knowledge of activities within the protection areas,
- Efforts to work with land owners to control activities in the Zone II.

Source Protection Recommendations:

To better protect the sources for the future:

- ✓ Inspect the Zone I areas regularly and when feasible remove activities not related to the water supply.
- ✓ Educate residents on ways they can help you to protect drinking water sources.

- ✓ Work with emergency response teams to ensure that they are aware of the stormwater drainage, (particularly along Bardwell Road and Barrett Road) in your Zone II and to contact the District when responding to spills or accidents within the Zone II.
- ✓ Consider inventorying USTs within the Zone II.
- ✓ Continue working with farmers in your protection areas to make them aware of your water supply and to encourage the use of a NRCS farm plan to protect water supplies. Encourage the use of BMPs on hobby farms.
- ✓ Develop and implement a Wellhead Protection Plan and include Belchertown in source protection efforts.

Conclusions:

These recommendations are only part of your ongoing local drinking water source protection. Additional source protection recommendations are listed in Table 3, the Key Issues above and Appendix A.

DEP staff, informational documents, and resources are available to help you build on this SWAP report as you continue to improve drinking water protection in your community. When funds are available, the Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing water supply source protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the Grant Program. Each spring, if funds are available, DEP posts a new Request for Response for the grant program (RFR).

Other grants and loans are available through the Drinking Water State Revolving Loan Fund, the Clean Water State Revolving Fund, and other sources. For more information on grants and loans, visit the Bureau of Resource Protection's Municipal Services web site at: <http://mass.gov/dep/brp/mf/mfpubs.htm>.

The assessment and protection recommendations in this SWAP report are provided as a tool to encourage community discussion, support ongoing source protection efforts, and help set local drinking water protection priorities. Citizens and community officials should use this SWAP report to encourage discussion of local drinking water protection measures. The water supplier should supplement this SWAP report with local information on potential sources of contamination and land uses. Local information should be maintained and updated periodically to reflect land use changes in the protection area. Use this information to set priorities, target inspections, focus education efforts, and to develop a long-term drinking water source protection plan.

Section 4: Appendices

A. Protection Recommendations and Additional Documents on Source Protection

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone I		
Does the Public Water Supplier (PWS) own or control the entire Zone I?	NO	Follow Best Management Practices (BMP's) that focus on good housekeeping, spill prevention, and operational practices to reduce the use and release of hazardous materials. Continue working with land owners to negotiate a Conservation Restriction or ownership to acquire additional land for protection.
Is the Zone I posted with "Public Drinking Water Supply" signs?	YES	Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Is Zone I regularly inspected?	YES	Continue daily inspections of drinking water protection areas.
Are water supply-related activities the only activities within the Zone I?	NO	Continue to keep other land uses out of the Zone Is. Continue working with land owners to negotiate a CR, MOU and other forms of protection as is practical.
Municipal Controls (Zoning Bylaws, Health Regulations, and General Bylaws)		
Does the municipality have Wellhead Protection Controls that meet 310 CMR 22.21(2)?	NO	Although the Town of Belchertown has bylaws and health regulations protecting the aquifers in town, they are not fully in compliance with 310 CMR 22.000. The Department has been in contact with the Belchertown Health Agent who has indicate that the Board will be considering the changes to the regulation sometime this fall or winter. Keep up contact with the Board to offer assistance in this matter.
Do neighboring communities protect the Zone II areas extending into their communities?	N/A	
Planning		
Does the PWS have a Wellhead Protection Plan?	NO	Consider developing a plan and include strategies for future source development and protection. Refer to "Developing a Local Wellhead Protection Plan" available at: www.state.ma.us/dep/brp/dws/ . Include Belchertown officials in the plan development and implementation.
Does the PWS have a formal "Emergency Response Plan" to deal with spills or other emergencies?	YES	Continue to work with the Fire Department, Board of Health, DPW, and local and state emergency officials.
Does the municipality have a wellhead protection committee?	YES	Include representatives from citizens' groups, neighboring communities, and the business community.
Does the Board of Health conduct inspections of commercial and industrial activities?	N/A	
Does the PWS provide wellhead protection education?	YES	Aim additional efforts at residential and agricultural uses within the Zone II and as appropriate Zone III.